THE RELATIONSHIP BETWEEN FOCUSSING ON BODY FUNCTIONALITY AND BODY SATISFACTION: THE MODERATING ROLE OF NEUROTICISM AND SOCIAL COMPARISON ORIENTATION

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Abstract

When people assess their body image, they tend to engage in negative evaluations which lead to body dissatisfaction. Body dissatisfaction has many harmful consequences including depression, anxiety and low self-esteem. It is also the main causal factor of eating disorders. It is has been suggested that using a body functionality approach to assess one's body may lead to more positive evaluations. The aim of this study was to explore the relationship between focussing on body functionality and body satisfaction, and to investigate the moderating role of neuroticism and social comparison orientation. This study involved 131 females aged 18 to 35 years. Participants completed three online questionnaires over three weeks. At test-day (week 2) participants completed a writing task in which they either wrote about their body image, body functionality, or control. Results found that the body functionality group did not increase their body satisfaction over time. Participants high in neuroticism reported lower body satisfaction. It was also found that participants in the body image group reported lower self-esteem, and those in the body functionality group reported lower self-objectification over time. The results from this study can be related to current psychological theories about body satisfaction.

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BMI	Body mass index
VAS	Visual analogue scales
SOQ	Self-objectification questionnaire
RSE	Rosenberg self-esteem
ANOVA	Analysis of variance

1. Introduction

1.1 Overview

In recent times, women have become so critical of their bodies, that body dissatisfaction has been termed normative. Women often critique their body based on its size and appearance and their evaluations are frequently harsh and focussed on the aspects they are not happy with or those that they wish to change. These negative evaluations lead women to become dissatisfied with their body. In the present culture, there is a strong focus on appearance. Social media is omnipresent, and focuses on images. Communication is centred on being able to see other people, whether it is via images or video clips of one's daily life. Apps such as Facebook, Instagram and Snapchat have led to people associating their personal value with how many "likes" or how much attention their published images receive. Many people have made careers solely by posting images of themselves, and gaining positive attention from all over the world. The issue with this is that many of these images are edited using airbrushing, colour correctors, filters, body slimmers and numerous other technological tools. The images that are being used to gain positive attention are often unrealistic in their portrayal of the female body. Nevertheless, these images are being used so often that they are depicted as a "normal" female body and encourage people to believe that this is how women should look. Therefore, when real women cannot attain these unrealistic body ideals, body dissatisfaction occurs.

1.2 Body image, body satisfaction and the thin-ideal

Body image research began to make advancements in 1950 with Schilder, When he published this definition of body image: "The picture of our own body which we form in our mind, that is to say, the way in which the body appears to ourselves." (Schilder, 1950; 11) Since then, this perceptual view has shifted to include many more aspects in the definition of body image such as body size, body weight, appearance, body esteem and body concern. More specifically, when investigating body image in current research, the focus is on two aspects, how one's body looks (appearance) and the size of one's body. We can assess one's body image to determine how satisfied an individual is with their body. This satisfaction relies on how closely aligned one's ideal body appearance and ideal weight are with their actual appearance and weight. The further apart one's ideal representation and actual body are, the more dissatisfied one becomes (Alleva et al. 2015).

Body dissatisfaction has been associated with various negative mental health outcomes including depression (Paxton et al., 2006; Tylka, 2004), social anxiety (Cash & Flemming 2002a) and low self-esteem (Cash & Pruzinsky, 2002a; Furnham, Badmin & Sneade 2002; Paxton et al., 2006). In early adolescent girls and mid adolescent boys, body dissatisfaction was found to be a predictor of depressive mood and low self-esteem later in life (Paxton et al., 2006). In a further study on self-esteem, it was found that participants with low body satisfaction tended to have low self-esteem and those with higher body satisfaction tended to have higher self-esteem (Thogersen-Ntoumani et al in 2011). Body dissatisfaction has also

been linked to eating disorders and body dysmorphic disorders (Cooley & Toray, 2001; Stice 2002; Tylka 2004). Cooley and Toray conducted a study in 2001 which followed female college students longitudinally over three years and found that figure dissatisfaction was the main causal factor in disordered eating.

In today's society, there are many ideals for women to adhere to in terms of body image. The "thin-ideal" is a concept in which certain images are presented as the ideal female body. These images are often unrealistic because they have been edited to enhance or reduce certain features of the natural female form. The thin-ideal is played on heavily by the media, in which fashion and magazines often only show one type of woman, and fail to show variety in women's body shape or size. It leads people to hold the unrealistic view that what is presented by the media is what all women look like. By using male figures in these images as well, it gives the impression that this is what men, or society, expect women to look like. The link between the thin-ideal and body dissatisfaction is quite clear; research suggests that body image dissatisfaction comes when an individual's ideal body image is different from their actual body image. Therefore if women are viewing unrealistic images of the female form and thinking that this is how their body should look, when they assess themselves and find that their body is far from what society is portraying as "ideal" it is likely that they will be much more critical of themselves and focus on the aspects of their body that they perceive to be wrong or not good enough (Alleva et al, 2014; Alleva et al, 2016). These critical evaluations lead to body dissatisfaction.

1.3 Objectification Theory

Objectification theory suggests that women are judged and valued, based on their appearance rather than their internal qualities (Fredrickson & Roberts, 1997). One main aspect of objectification theory is the concept of self-objectification, which involves a woman's internalisation of someone else's perspective of her body. It involves women seeing their body as an object, rather than as a human being and judging themselves on their body parts rather than their internal qualities. Women have adopted the observer's view on their bodies, meaning that rather than holding their own view of their body, women asses their bodies based on how they think others view them. The extent to which one views their body as an object, rather than a human being is known as self-objectification. Research has found a link between self-objectification and body satisfaction. Fredrickson began testing self-objectification using a method of viewing oneself in the mirror wearing either a sweater or a swimsuit. It was thought that the swimsuit provided more opportunity to examine one's body than the sweater. The results showed those participants who wore a swimsuit engaged in higher self-objectification compared to those who wore a sweater. The same participants who wore a swimsuit engaged in more body shame, which in turn predicted restrained eating. A 2011 study attempted to replicate these findings by assigning participants to either wear tight fitting exercise clothing (shorts and a crop top) or loose fitting exercise clothing (sweat pants and a loose t-shirt), while viewing themselves in a mirror. Those in the tight fitting clothing engaged in more self-objectification which was associated with depression, anger and feelings of fatness, compared to those wearing loose clothing.

Self-objectification is increased by the media or advertisements, and is a trait that tends to be higher when women are viewing images that portray the thin-ideal as opposed to non-thin-ideal images (Harper & Tiggemann, 2008).

When objectification theory was first posited by Fredrickson and Roberts in 1997, it was evident that advertisements portraying the thin-ideal often displayed males looking at females, who were looking into the distance or away from the male's view. This occurred far more often than females looking at males (Goffman, 1979). These advertisements gave the impression that females were often being judged or assessed by others whether they wanted to be or not. It appeared that others' views of women's bodies were more important than their own view. Objectification still occurs in advertisements today by paying specific attention to certain aspects of women's bodies and heavily focussing on the thin ideal.

In 2015, Mulgrew and Hennes investigated the effect of functionality and aesthetic focussed images on women's body satisfaction. The participants in this study were 160 females aged 17 to 19 years. They were randomly assigned to one of three groups, body functionality, body aesthetics, or control (scenery). The study involved participants completing pre-test measures of body satisfaction, mood and athletic internalization. They then viewed a 2.5 minute slideshow with pictures of still images which were in line with the group they were assigned to, functionality, aesthetics or control. After viewing the images they completed post-test measures. It was hypothesized that women would be more negatively affected by images that were focussed on the aesthetic qualities of the body compared to the images that focussed on functionality; however this hypothesis was not supported. There were no differences in post-test body image, fitness satisfaction or mood between the functionality and aesthetics groups. Results did find that women from both the functionality and aesthetic groups reported poorer outcomes than those in the control group. Women who viewed the aesthetic focussed images had lower fitness satisfaction, greater feelings of fatness and more anger and depression

compared to women in the control group who viewed scenery. The women in the functionality group also showed increased feelings of fatness and lower fitness satisfaction, but they did not show any differences in mood. This study indicates that even being exposed to images with a body focus, whether it is functionality or appearance focussed can have harmful effects on one's body satisfaction and mood, compared to images where the body is not the subject of attention.

1.4 Body functionality perspective

It is evident that a great part of body dissatisfaction comes from how we look at and assess our bodies. While assessing our body image appears to have some very harmful consequences such as depression, low self-esteem and social anxiety, it may be possible to avoid these harmful consequences by focussing on other aspects of the body. Recent research has begun to investigate whether focussing on body functionality, rather than body image, can help ameliorate some of the negative aspects that come with focussing on body image.

Body functionality has previously come under the broader concept of body image. However, it has been suggested that body functionality be separated from body image and be measured as its own construct in its entirety. Body functionality refers to all the things one's body can do, it describes the body as a process. Specifically, body functionality includes physical capacities, health and internal processes, communication and self-care and creativities. Body functionality is not limited to 'physical' aspects, therefore it does not limit itself to being evaluated by 'able bodied' individuals.

When assessing body functionality, there are fewer societal ideals to adhere to and people tend to focus more on the positive things that their body can do, rather than scrutinizing the things that their body cannot do. The discrepancy between ideal body functionality and actual body functionality does not exist to the extent that it does with body image. Therefore people tend to identify a more positive representation of their body when they assess body functionality compared with body image (Alleva et al, 2014).

Research is beginning to emerge that looks at how focussing on body functionality can influence one's body satisfaction. Recent research has found some evidence showing that focussing on body functionality may have positive effects on body satisfaction. In 2014 Alleva conducted a study which aimed to improve body satisfaction by using a body functionality focus on the body. The study involved investigations into two different groups of people, the first (study 1) included undergraduate women and men, while the second (study 2) included women aged 30 to 50 years. During study 1, undergraduate men and women were randomly assigned into one of three body approach conditions; functionality, appearance or control. First, baseline measures were completed measuring body concern, body satisfaction (appearance satisfaction and image satisfaction) and global self-esteem. At test day, which was one-week after baseline measures, participants completed a writing task in which they were asked to describe their body in terms related to whichever of the three body approach conditions they were previously assigned (functionality, appearance or control) . Immediately after completing this writing task participants completed measures of body satisfaction, global self-esteem and mood. Follow-up was one-week later again at which measures of body satisfaction and global self-esteem were completed. The results found were somewhat mixed, demonstrating some support of a functionality focus. Firstly, men who were assigned into the functionality writing task experienced an increase in their body

functionality satisfaction. However, women completing the same writing task did not experience any change in their body satisfaction. Secondly, women assigned to the appearance writing task experienced a decrease in their body appearance satisfaction, while men in the same writing task did not show any changes in body satisfaction. Study 2 followed the same procedure as study 1, however as mentioned earlier, the participants in study 2 were women only aged 30-50 years. The aim was to investigate whether focussing on body functionality would improve body satisfaction in a community sample of mature women. Study 2 also found mixed results. Women in the functionality writing task did experience improvements in their functionality satisfaction at test-day (compared to baseline) however; these improvements did not reach significance. Surprisingly, these women did experience a significant increase in functionally satisfaction from baseline to follow-up. Women assigned to the appearance writing task did not show any changes in body satisfaction. This result was as hypothesised given the tendency for appearance importance to decrease with age.

While this study provided some positive results in regards to using a body functionality focus, further investigations were certainly required. One limitation of this study was thought to be that it was quite short and perhaps a lengthier body functionality intervention might be beneficial.

Alleva continued this idea with further research into the use of a body functionality focus and in 2015 A 3-step treatment program called “Expand Your Horizon” was used to improve body image and reduce self-objectification by training women to focus on body functionality. The program involved women aged 18-30 years who were randomly assigned to either a body functionality focus group or a control group. Participants in the body functionality focus group completed three writing tasks at three successive time points. Each task asked participants to describe the functions their body performs and why they are important and meaningful to them. The first writing task focussed on senses and physical capacities, the

second writing task focussed on health and creative endeavours, while the third focussed on self-care and communication with others. Participants in the control group followed the same structure of writing program, however they wrote about creativity which included them working on a series of fictional short stories. One week after the third writing task was complete, post-test measures were done. The results of this study found that women assigned into the functionality writing task experienced higher levels of body appearance satisfaction and body functionality satisfaction and lower levels of self-objectification compared to those in the control writing task. While this shows some positive results, this study has a few noteworthy limitations. It did not control for participants preconceived ideas about whether the writing programme might help increase their body satisfaction. This means that some participants may have already expected the functionality writing task to improve their body satisfaction so they may have tended to look at their bodies more positively if they were assigned to this group. Another limitation is that the only other comparison group was the control group. It may have been beneficial to have a third comparison group with a writing task more similar to the functionality focus, for example a body image focus group.

To further the research even more, Alleva conducted another study which investigated whether focussing on body functionality can protect women from the potential negative effects of viewing thin-ideal media images. The thin-ideal in media is when unrealistic images are displayed to the public, leading the viewer to think they are realistic and how women should look. This study involved 70 undergraduate women aged 18-28 years who were randomly assigned into a ‘functionality’ or ‘control’ group and the experiment was completed within one day. First participants complete pre-test measures of body functionality satisfaction and body appearance satisfaction and some mood assessments. Next the participants completed a writing task in which those assigned into the functionality group were asked to write about their body functions and reflect on why they were important to

them. The participants assigned into the control group were asked to describe a route they took during the day, for example to university or home. Immediately after the writing task, participants viewed a slide show of images which contained 12 images featuring thin-ideal advertisements for perfume and purses, with three product-only advertisements amongst them. After viewing the slideshow, participants completed post-test measures of body functionality satisfaction, body appearance satisfaction, self-objectification and body appreciation. The first result found was as hypothesised: women assigned into the functionality writing task had greater functionality satisfaction and body appreciation after viewing the thin-ideal images compared with the women in the control writing task. However, surprisingly participants in the functionality writing task did not experience greater appearance satisfaction or lower self-objectification. Again, although this study has found some positive results in favour of using a body functionality focus to protect one's satisfaction it cannot yet be applied to all areas of body satisfaction.

1.5 Personality traits and body satisfaction

Research has begun to look at the role of personality traits in people's body satisfaction. Personality traits may play some form of moderating role in the relationship between how one looks at their body, and their body satisfaction. Currently, the research suggests that for the majority of people, when they use a body functionality focus, their body satisfaction tends to be higher than when they use a body image focus. However, this is not the case for all people and therefore further investigations are required into why this works for some and not others. One theory is that personality traits moderate the effect. In particular, the traits of neuroticism and social comparison orientation are two aspects of one's personality that are thought to be possible moderators.

Neuroticism, also referred to as emotional stability, uses the following adjectives to describe its characteristics: anxiety (tense), angry hostility (irritable), depression (not contented), self-consciousness (shy), impulsiveness (moody) and vulnerability (not self-confident). When assessing neuroticism, people rate the degree to which these aspects apply to them and this determines how neurotic they are. Aspects of the five-factor personality model were investigated by Tok et al. (2010) in research that examined the relationship between dimensions of the five factor personality model and body image satisfaction and social physique anxiety in college student athletes and non-athletes. The research was correlational in that participants completed the five factor personality inventory, the social physique anxiety scale and the body image satisfaction questionnaire. The study revealed that overall social physique anxiety scores were associated with the extraversion dimension of the five-factor personality model. Emotional stability, or neuroticism, was highly related to body image dissatisfaction and overall social physique anxiety in the entire sample. The only significant predictor of body image dissatisfaction in both the athlete and non-athlete groups was emotional stability (neuroticism). Further studies into neuroticism have found the trait to be positively associated with actual-ideal weight discrepancy, meaning that as neuroticism increases, the gap between ones actual weight and ideal weight also increases. And negatively associated with body appreciation, meaning that as neuroticism increases, one's body appreciation decreases (Swami et al., 2013).

The second personality trait considered to possibly have a moderating effect, social comparison, is when individuals gain information about their own level of attractiveness by comparing themselves to another individual. The theory posits that people will engage in either upward or downward social comparisons. Upward social comparison involves comparing oneself to someone whom they judge to be better off than themselves, and usually leads to negative outcomes including decreased self-esteem (Festinger, 1954). Downward

social comparison involves comparing oneself to someone whom they believe to be worse off than themselves and usually leads to positive outcomes such as increased self-esteem (Festinger, 1954). Social comparison orientation refers to the extent to which one engages in social comparison, and can be seen as a personality trait. Some research has found that social comparison orientation has an effect on body satisfaction (Myers & Crowther, 2009). However, issues arise due to the fact that women will not discontinue making upward social comparisons, even though detrimental outcomes arise (Strahan et al., 2006). Women will also compare themselves to unrealistic media images, just as much as they will compare themselves to more relevant peers (Engeln-Maddox, 2005; Strahan et al., 2006). Research suggests that when an upward appearance-focussed comparison has been made, body satisfaction tends to decrease (Tantleff-Dunn & Gokee, 2002). Therefore it is necessary to investigate whether social comparison orientation moderates the effect of a functionality focus on the body.

All of this research provides insight into some of the mechanisms that may or may not be facilitating the differences in body satisfaction and potential areas to target as protective factors.

1.6 Present study

The research investigating body satisfaction explained above has found some mixed results. Therefore, this study aims to replicate the study conducted by Alleva et al in 2014, to support the literature that suggests a body functionality focus can have a positive effect on body satisfaction. The current research sets out to examine the relationship between focussing on body functionality and body satisfaction and also investigates the moderating role of neuroticism and social comparison orientation. This study will use a sample of

women aged 18 to 35 years, predominantly from the student population, however this is not a requirement of participation.

1.7 Rationale for present study

As the research into using a body functionality focus has provided mixed results so far, being able to replicate Alleva's 2014 study will add to the research that shows using a body functionality approach can help to increase body satisfaction. The information found from this study will provide further indication that body functionality and its relationship to body satisfaction is an area worth continuing to investigate.

Due to the fact that previous research has found a body functionality approach does not work for all individuals, it is important to look at why this might be. This helps to explore more specific mechanisms behind the body functionality and body satisfaction relationship. The current study will address this issue by investigating whether the personality traits of neuroticism and social comparison play a moderating role in the relationship between body functionality and body satisfaction. The information gathered will contribute to the investigations about why body functionality works for some people, but not others.

This research is important because in today's society body dissatisfaction and its negative outcomes are so prevalent, that if we can find a way to help prevent body dissatisfaction, this can help a number of women and should be explored greatly. The knowledge from this research can be used to encourage women accept and value themselves, based on aspects other than their appearance, which in turn will help to prevent the negative outcomes of body dissatisfaction including depression, anxiety, low self-esteem and eating disorders. If we

know there are certain personality traits moderating the effect of a body functionality approach, this can be used in clinical settings to help with the development of treatment plans for eating disorders and body dysmorphic disorders.

1.8 Hypotheses

The main objective of this research is to replicate the study by Alleva et al 2014, which aimed to improve body satisfaction by inducing a body functionality focus on the body. The second part of this study is to investigate the moderating role of neuroticism and social comparison orientation.

The specific hypotheses are as follows:

Hypothesis one: The body functionality group will show an increase in body satisfaction, compared to the body image and control group. Alleva et al (2015) found that participants who have been primed to focus on their body functionality should be more satisfied than those who have been primed to focus on their body image.

Hypothesis two: The body image group will show a decrease in body satisfaction compared to the body functionality and control group. Previous research has indicated that those who have been primed to focus on their body image should become less satisfied with their bodies, compared with those focussing on their body functionality (Alleva et al, 2014; Alleva et al, 2016).

Hypothesis three: The body image group will report lower self-esteem. As the participants in the body image group should report lower body satisfaction, they should also report lower self-esteem. Low self-esteem has been found to be a negative outcome of body dissatisfaction (cash & Pruzinsky, 2002a; Furnham, Badmin & Sneade, 2002; Paxton et al, 2006).

Hypothesis four: The body functionality group will report lower self-objectification. Self-objectification has been associated with low body satisfaction, therefore those in the body functionality group (who should report higher body satisfaction) should also report less self-objectification. (Alleva et al, 2015)

Hypothesis five: For people high in Neuroticism, body functionality will not serve as a protective factor against body dissatisfaction. Swami et al (2013) found that as neuroticism increases, one's body appreciation deceases. Perhaps for those individuals high in neuroticism, a body functionality focus will not be sufficient to protect against body dissatisfaction.

Hypothesis six: Those in the body image condition will show greater decreases in body satisfaction when they are also high in Neuroticism compared to those who are low in neuroticism. When investigating personality traits, a study by Tok et al (2010) indicated that neuroticism was associated with body dissatisfaction in two different groups of college students.

Hypothesis seven: For people high in Social Comparison Orientation, body functionality will not serve as a protective factor against body dissatisfaction. Strahan et al (2006) found that women will not discontinue engaging in social comparison even though they are aware of the detrimental effects. Therefore, being high in social comparison might hinder the effect of using a body functionality focus to protect against body dissatisfaction.

Hypothesis eight: Those in the body image group will show greater decreases in body satisfaction when they are also high in social comparison compared to those low in social comparison. Research by Myers and Crowther (2009) has found some indications that social comparison may have an effect on body satisfaction.

2. Method

2.1 Participants

One-hundred and seventy-five female participants completed baseline measures. Thirty-two participants (18%) did not complete test day measures and a further twelve participants (7%) did not complete the follow-up measurement or did not complete the manipulation accurately, leaving a final sample of 131 females (n = 41 in the body image condition, n = 44 in the body functionality condition, n = 46 in the control condition). Of the final sample, most participants were university students (82.3%), with a mean BMI (based on self-reported height and weight) of 23.55 (SD = 4.47; range 16.46 to 39.74), and 29% were currently dieting to lose weight. There were no significant differences in background characteristics (university student vs other, dieting status or BMI, all ps > .38), baseline personality traits, baseline self-esteem or baseline body satisfaction measures (all ps > .25) between those who completed all three measurements and those who did not. Participants who began test day measures, but who did not complete the manipulation accurately or did not complete the follow-up were evenly distributed over the three experimental conditions, Chi^2 (2,143) = 1.75, p = .42.

2.2 Procedure

Participants were recruited mostly from the University of Canterbury, either from the undergraduate psychology programme, or from advertisements placed around campus (Appendix A). Recruitment was also done via the social media site Facebook. Interested participants received an information sheet about the study (Appendix C) explaining that participation involved completing three short questionnaires over the course of two weeks, including completing a short, guided writing task as part of the second questionnaire. The information sheet included a link to an informed consent form and the first questionnaire

(baseline). One week after completing baseline, participants received an email with a link to the second questionnaire. This questionnaire (test day) included the writing task and participants were randomly assigned to one of three body approach conditions: functionality, image, or control. One week after test-day, they received a link to the final questionnaire (follow-up). Reminder emails were sent to participants to complete each survey. Participants completed all three questionnaires on their own devices (laptop, computer, cellphone or tablet) via Qualtrics, an online survey system. Only participants who completed all three measurements were included in the analyses. At baseline, participants completed demographic information, personality measures, self-esteem, body satisfaction measures and a food choice questionnaire (not used in the current study). At test-day (1 week later), participants completed a mood questionnaire, then the writing assignment, then body satisfaction measures and self-esteem. At follow-up (1 week later), participants completed body satisfaction questions, self-esteem and a food choice questionnaire (not used in the current study). At the end of the study, participants were debriefed and either received a $10 mall voucher or credit towards their 100 level psychology course.

2.3 Experimental Manipulation

A writing assignment developed by Alleva et al. (2014) was used to manipulate body focus. Alleva et al. (2014) modelled the structure of the writing assignment on Pennebaker's writing task on emotional disclosure (Pennebaker, 1997).

Participants in the body functionality condition received the following instructions:

> This is a writing assignment. I would like you to describe what your body can do. In your writing, I would like you to take your time, really let go and explore the different things your body can do. For example, you might want to tie your answer to physical activity and movement (e.g., walking, stretching), to health (e.g., healing, digesting), to daily functions (e.g., eating, sleeping), or even to your

body's relationship with other people (e.g., hugging, holding hands). Different bodies can do many different things, so there are no right or wrong answers. Your answer will be unique depending on your body. All of your answers will be completely confidential and anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that you write at least 100 words.

Participants in the body image condition received the following instructions:

This is a writing assignment. I would like you to describe what your body looks like. In your writing, I would like you to take your time, really let go and explore the appearance of your body. For example, you might want to tie your answer to body shape and weight (e.g., height, bone structure), to facial features (e.g., eye brows, hair texture), to body parts (e.g., arms, hands), or even to your body's other markings (e.g., birthmarks, piercings). Different bodies can look many different ways, so there are no right or wrong answers. Your answer will be unique depending on your body. All of your answers will be completely confidential and anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that you write at least 100 words.

Participants in the control condition received the following instructions:

This is a writing assignment. I would like you to describe what your route to university or work is like. In your writing, I would like you to take your time, really let go and explore what your route is like. For example, you might want to tie your answer to signs (e.g., street signs, shop signs), to buildings (e.g., garages, libraries), to public areas (e.g., parks, market squares), or even to fine details (e.g., flowers, colours). Everyone takes a different route to the university/work, so there are no right or wrong answers. Your answer will be unique depending on the route you take. All of your answers will be completely confidential and anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that you write at least 100 words.

2.4 Measures

Neuroticism (baseline). The Big Five Inventory was used to measure neuroticism. The big five inventory is a 44-item inventory that measures the big five personality factors in an individual (John & Srivastava; 1999). It is divided into 5 subscales, each measuring a set of personality traits. For this study, only the neuroticism subscale was used, as this was the personality trait at which was looked. The neuroticism subscale is made up of eight items that are rated on a scale ranging from 1 *(disagree strongly*) to 5 (*agree strongly*). To score this subscale, items 2, 5, and 7 were reverse scored and then an overall score was calculated (appendix I).

Social comparison orientation (baseline). Social comparison orientation was measured using the Iowa-Netherlands Comparison Scale (INCOM) (Gibbons & Buunk; 1999, Buunk & Gibbons; 2006). This scale consists of 11-items relating to how people compare themselves to others. Each item is rated on a 5-point Likert scale from 1 (*disagree strongly*) to 5 (*strongly agree*). An overall score is calculated, with items 6 and 10 being reverse coded. The higher one's score, the more they tend to compare themselves to others (Appendix J).

Body satisfaction (baseline, test-day, follow-up). Body satisfaction was assessed with three items using Visual Analogue Scales (VAS). The VAS used in this study were based off VAS used in Alleva et al (2014). VAS require participants to mark a vertical line across a horizontal line measuring from 0 to 100, with the anchors being 'not at all' and 'extremely. The distance between the participant's vertical mark and the 'none' anchor is used to calculate a score out of 100. Participants were asked on a scale of 0 (not at all) to 100 (extremely), how satisfied are you right now with: 1. your physical appearance, 2. your body

shape and size, 3. your body functionality. VAS were used in the current study because they are sensitive to small changes. VAS responses are also harder to be recalled, meaning that at test-day and follow-up participants are less likely to remember their baseline VAS scores than if a Likert scale had been used. This reduces bias on the post-test scores due to participants responding based on how they think they responded for their pre-test (Birkland et al., 2005; Heinberg & Thompson, 1995) (Appendix K).

Self-objectification (baseline, test day, follow-up). Self-objectification was measured using The Self-Objectification Questionnaire (SOQ) (Noll & Fredrickson; 1998), which measures the extent to which people view their bodies in appearance-based terms or competence-based terms. The scale requires participants to rank 10 terms in order of importance. The terms identify objectified and non-objectified traits. The SOQ is based on self-objectification theory and the body-esteem scale. The body-esteem scale recognizes that women's body esteem is made up of the components of physical attractiveness, weight control and general physical condition. The SOQ uses these components, not to assess how satisfied one is with their body, but how they rank certain aspects of importance in regards to their own body. Scores for this questionnaire are computed by summing the ranks for the appearance and competence attributes separately. Then a difference score is computed. Scores range from -25 to 25, with a higher score reflecting a greater emphasis on appearance, meaning greater self-objectification (Appendix L).

Self-esteem (baseline, test day, follow-up). Global self-esteem was measured using the Rosenberg Self-Esteem Scale (RSE-S; Rosenberg, 1965). This is a widely used measure with reliability of $\alpha = .81$ calculated from a sample of undergraduate students and the general population from 50 different countries (Schmitt & Allik, 2005). The Rosenberg Self Esteem

Scale is a 10-item scale measuring global self-worth using both positive and negative reports about the self. The scale uses a 4-point Likert scale in which participants select their answers on the scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Items 2, 5, 6, 8 and 9 were reverse coded and then item ratings were summed, with higher scores indicating higher self-esteem (Appendix M).

Food choice questionnaire (follow-up)

The Food choice questionnaire (Steptoe, Pollard & Wardle, 1995) was used to investigate what things people find important when they are making choices about their food. Although this was presented in the questionnaire, the data gathered was not analysed during this study (Appendix N).

Mood (test day). Mood was measured using visual analogue scales (Heinberg & Thompson, 1995) to control for differences in mood prior to participants completing the writing task. Participants were asked to mark a line on a scale from 0 (not at all) to 100 (extremely) based on how they were feeling at the time. They rated five mood aspects including anxious, happy, sad, positive and energetic (Appendix O).

2.5 Cronbach's alpha

Cronbach's alpha was conducted for all measures used in this study. The neuroticism scale consisted of eight items with a reliability of $\alpha = .815$. The social comparison orientation scale consisted of eleven items with a reliability, $\alpha = .734$. The body satisfaction scale consisted of three VAS items, reliability was calculated together for items one & two, $\alpha = .907$ and separately for the third item, $\alpha = .820$. The self-objectification questionnaire had a reliability of $\alpha = .924$. The Rosenberg self-esteem scale consisted of ten items with a

reliability of α = .893. The mood VAS consisted of five items, reliability was calculated for items two, four and five together with α = .859 and items one and three were calculated together with a reliability of α = .689.

2.6 Data Analysis

The data collected from each of the three time points were merged into one file and entered into Statistical Package for Social Science (SPSS; version 23). All data analyses were conducted in SPSS. Statistical significance levels were set to $p < .05$. Manipulation checks were performed to identify any data that should be removed before analyses. Descriptive analyses were performed to check for group differences.

2.6.1 Body satisfaction within groups and across time

Each of the three body satisfaction measures were analysed using three by three repeated measures analyses of variance (ANOVA) to look for differences across the groups and time. The treatment groups (functionality, image and control) were entered as the independent variable and body satisfaction was the dependent variable. Any significant interaction effects that were found were followed up with post hoc testing (planned comparison paired t-tests) and any significant main effects were followed up with post hoc comparisons (Scheffe).

2.6.2 Self-esteem and self-objectification

Self-esteem and self-objectification were analysed using separate three by three repeated measures ANOVA. The treatment groups (functionality, image and control) were entered as the independent variable and self-esteem and then self-objectification were the dependent variables. Significant interaction effects were followed up with post hoc testing (planned

comparison t-test) and significant main effects were followed up with post hoc comparisons (Scheffe).

2.6.3 Moderating role of neuroticism and social comparison

As described above, the three by three ANOVA were conducted again for the body satisfaction measures, with treatment groups (functionality, image and control) as the independent variable and body satisfaction as the dependent variable, however neuroticism and social comparison were included as covariates. Separate ANOVA were conducted for both neuroticism and social comparison.

3. Results

3.1 Manipulation Check

Participants' written text entries were read by the author of this thesis to ensure they had followed the instructions. Participants were asked to write at least 100 words and to write about their body functionality, their body appearance, or their route to university/work (control). Criteria were deemed to have not been met if their writing included too many statements that were not related to their manipulation. For example, those writing about body appearance were asked to write about things including the shape and weight of their body, and those writing about body functionality were asked to write about what their body could do. If a participant assigned to the body appearance condition included too many details related to body functionality, this was counted as not following the instructions. If a participant assigned to the body functionality condition included too many details related to body appearance then this was counted as not following the instructions. Each written entry was rated on a 3-point scale: 1 = followed instructions, 2 = mostly followed instructions and

3 = did not follow instructions. Written entries shorter than 100 words were all rated as 3. Entries containing no statements irrelevant to their condition were rated as 1, those that contained 1 or 2 statements irrelevant to their condition were rated as 2 and those that contained more than 3 statements irrelevant to their condition were rated as 3. 105 entries were rates as 1, 26 entries were rates as 2, and 44 entries were rates as 3. All participants who were ranked with a 3 were removed before data analysis began.

3.2 Descriptive analyses

All participants in this study were female. Forty-one participants completed the body image condition, forty-four participants completed the body functionality condition, and forty-six participants completed the control condition. There were no group differences at baseline in BMI (p = .187), neuroticism (p = .248), social comparison orientation (p = .676) and whether or not participants were currently dieting, X^2 (2, N = 143) = 4.46, p < .05. There were also no group differences on test day in mood prior to completing the writing task (anxious p = .843, happy p = .947, sad p = .451, positive p = .645, energetic p = .881). The fact that no group differences were found shows that randomization was successful.

Table 1 presents descriptive statistics and correlations between the key variables in the study at baseline. Participants with higher body mass index were more likely to be currently dieting and were less satisfied with their appearance and body size. Those who were high in neuroticism were less satisfied with their appearance, body size and body functionality. They were also more likely to compare themselves to others. Participants with low self-esteem were more likely to have neurotic traits and compare themselves to others. They were also less satisfied with their appearance, size and body functionality.

Table 1
Correlation matrix and descriptive statistics measured at baseline.

		1	2	3	4	5	6	7	8	9
1	Body mass index									
2	Dieting	-.30**								
3	Neuroticism	-.02	-.07							
4	Social comparison	-0.00	-.16*	.38**						
5	Physical appearance satisfaction	-.31**	.34**	-.32**	-.15					
6	Body shape and size satisfaction	-.49**	.38**	-.29**	-.16*	.82				
7	Body functionality satisfaction	-.15	.15*	-.36**	-.23**	.49**	.48**			
8	Self-objectification	.08	.19*	-.19*	-.24**	.19*	.17*	.07		
9	Self-esteem	.12	-.23**	.53**	.16*	-.62**	-.54**	-.46**	-.11	
	M	23.45		24.85	37.72	58.49	54.53	66.97	6.02	27.38
	SD	4.16		5.51	5.45	21.33	24.21	22.17	12.89	4.55

Note. Dieting 1 = yes; 2 = no.
* $p < .05$.
** $p < .01$.

3.3 Body Satisfaction

The three body satisfaction measures were analysed with 3(Condition; body image, body functionality, control) x 3(Time; baseline, test-day, follow-up) repeated measures analyses of variance with Condition as a between subjects factor and Time as a within subjects factor. The mean and standard deviations for physical appearance satisfaction, body shape and size satisfaction and body functionality satisfaction across time and writing condition are reported in Table 2.

Table 2.

Mean body satisfaction scores across the three conditions over time

	Functionality condition			**Appearance condition**			**Control condition**		
	Appearance satisfaction (M,SD)	*Shape & size satisfaction (M,SD)*	*Functionality satisfaction (M,SD)*	*Appearance satisfaction (M,SD)*	*Shape & size satisfaction (M,SD)*	*Functionality satisfaction (M,SD)*	*Appearance satisfaction (M,SD)*	*Shape & size satisfaction (M,SD)*	*Functionality satisfaction (M,SD)*
Baseline	64.45	62.89	68.53	58.38	52.17	70.34	59.80	52.53	62.51
	(18.44)	(20.85)	(21.26)	(22.20)	(25.42)	(21.260	(19.05)	(24.34)	(21.90)
Test-day	63.51	64.32	70.45	61.70	64.06	68.83	52.60	52.12	61.02
	(18.52)	(19.55)	(21.26)	(20.070	(23.36)	(19.26)	(22.93)	(22.00)	(23.41)
Follow-up	66.66	65.55	70.05	60.17	56.17	70.29	56.41	52.91	59.54
	(17.98)	(18.01)	(18.73)	(21.14)	(23.85)	(20.88)	(17.64)	(21.48)	(32.51)

3.3.1 Physical appearance satisfaction

The analysis with physical appearance satisfaction as the dependent variable found no main effects for Condition, $F(2, 128) = 2.74$, *ns*, or Time, $F(2, 127) = 1.10$, *ns*. However, the interaction effect between Condition and Time was significant, $F(4, 256) = 2.86$, $p < .05$, $p\eta^2 = .043$. The interaction was followed up with planned comparisons (paired t-tests), testing the differences between baseline and test-day and baseline and follow-up for each condition. For participants in the body image and body functionality conditions no significant changes in physical appearance satisfaction between baseline and test-day (*p*s > .14) and baseline and follow-up (*p*s > .33) occurred. However, participants in the control condition reported lower physical appearance satisfaction on test-day as compared to baseline $t(45) = 2.93$, $p < .01$. At one-week follow-up the difference with baseline satisfaction was no longer significant, $t(45) = 1.71$, *ns.* The interactive effect is presented in Figure 1, where it can be seen that the control condition have a significant difference in their physical appearance satisfaction scores at baseline vs. test day.

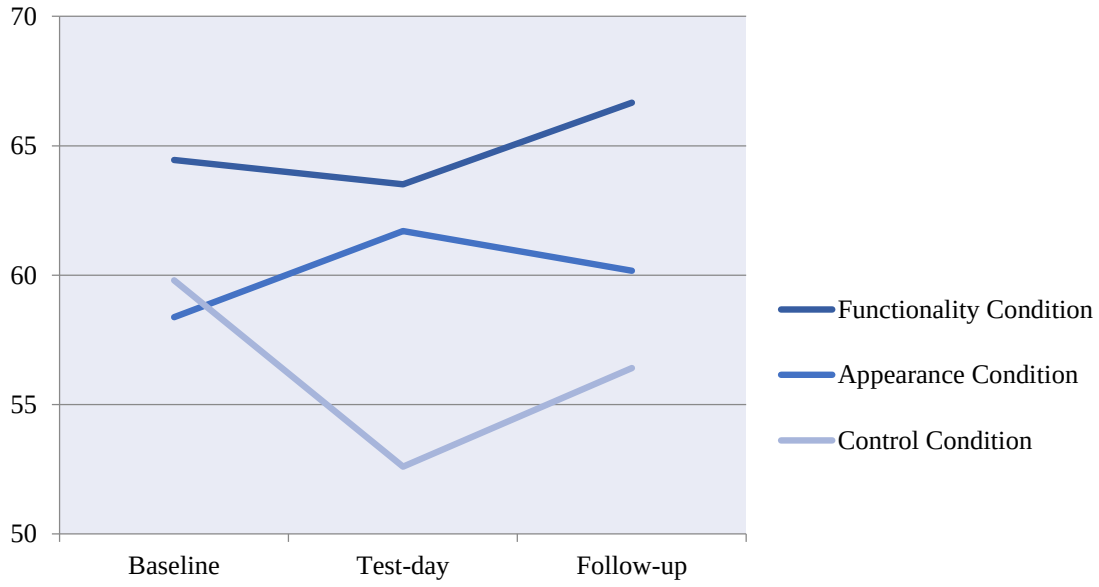

Figure 1. Physical appearance satisfaction scores at baseline, test-day and follow up for the three conditions.

3.3.2 Body shape and size satisfaction

The analysis with body shape and size satisfaction as the dependent variable found a main effect for Condition, $F(2, 128) = 4.32$, $p < .05$, $p\eta^2 = .063$. No main effect was found for Time $F(2,127) = .637$, *ns*. The interaction effect between Condition and Time was not significant, $F(4, 256) = .295$, *ns*. The main effect for Condition was followed up with post-hoc comparisons (Scheffe), showing that across the three time points participants in the control condition scored lower on body shape and size satisfaction compared to those in the body functionality condition, $p < .05$. Participants in the body image group scored in between and did not significantly differ from either group. Figure 2 shows the main effect for condition, and illustrates that participants in the control condition score significantly lower on their body shape and size satisfaction than those in the body functionality condition.

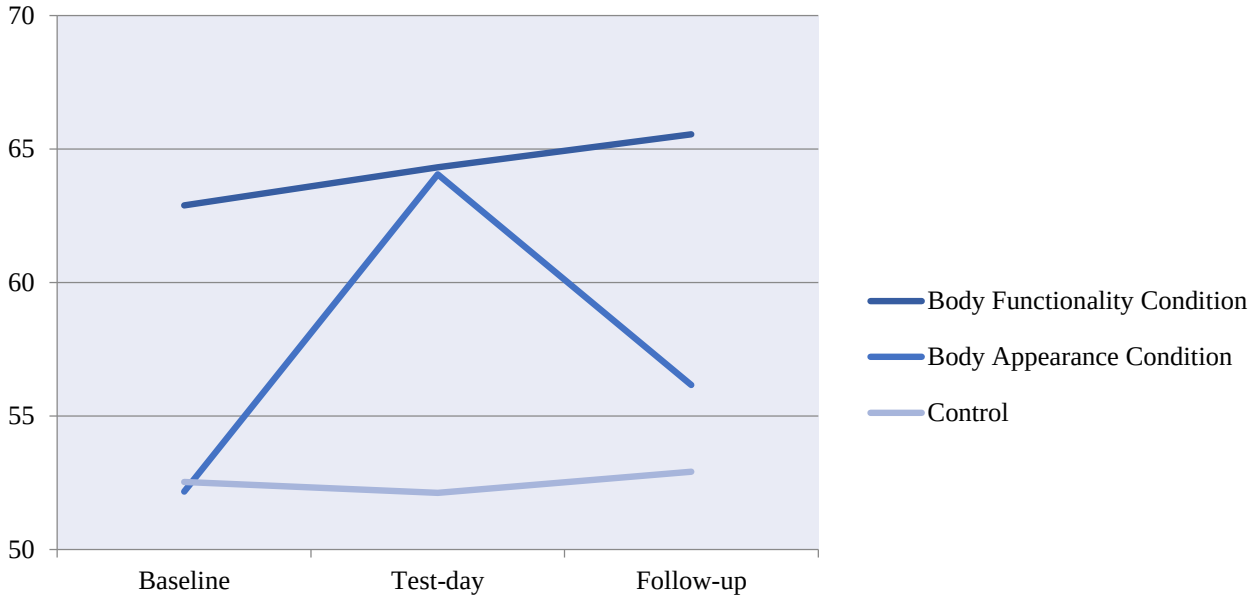

Figure 2. Body shape and size satisfaction scores at baseline, test-day and follow-up for the three conditions

3.3.3 Body functionality satisfaction

The analysis with body functionality satisfaction as the dependent variable found a significant main effect for Condition $F(2, 128) = 3.16$, $p < .05$. $p\eta^2 = .047$. No main effect was found for Time, $F(2, 127) = .003$, *ns*. There was no interaction effect between Condition and Time, $F(4,256) = .774$, *ns.* Although a significant main effect for Condition was found, post-hoc comparisons showed that across the three time points neither group differed significantly from each other (all *ps* > .07). The main effect can be seen in figure 3, where the body functionality and body appearance condition participants score higher on functionality satisfaction than the control condition participants. However, the difference in scores was not significant after further analyses.

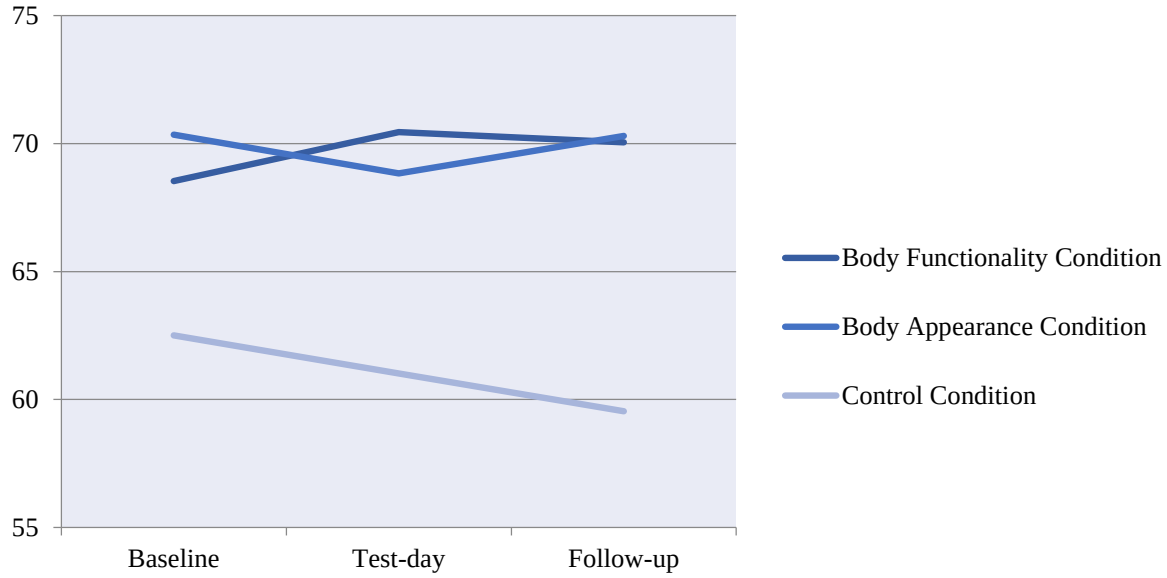

Figure 3. Body functionality scores at baseline, test-day and follow-up for the three conditions

3.4 Self Esteem

The global self-esteem measure was analysed with 3(Condition; body image, body functionality, control) x 3(Time; baseline, test-day, follow-up) repeated measures analyses of

variance with Condition as a between subjects factor and Time as a within subjects factor. The mean and standard deviations for self-esteem and self-objectification, across time and writing condition are reported in Table 3.

The analysis with self-esteem as the dependent variable found a significant main effect for Condition, $F(2,128) = 4.327$, $p < .05$. $p\eta^2 = .063$. In addition, a significant main effect for Time was found $F(2,127) = 9.51$, $p < .01$ $p\eta^2 = .13$. No significant interaction effect between Time and Condition was found, $F(4,256) = .464$, *ns*. The significant main effects of Condition and Time were followed up with post-hoc testing. Participants in the body image group reported lower self-esteem at test-day compared to baseline $t(40) = 2.21$, $p < .05$ and at follow-up $t(40) = 4.58$, $p < .05$. Participants in the body functionality group did not report lower self-esteem at test-day $t(43) = 1.78$, *ns*, nor at follow up $t(43) = 1.88$, *ns*. Participants in the control group did not report lower self-esteem at test-day compared to baseline, $t(45) = .78$, *ns*. However, they did report lower self-esteem at follow up $t(45) = 2.16$, $p < .05$.

Table 3.

Means and standard deviations for participants' self-objectification and self-esteem scores.

	Self – objectification			**Self – Esteem**		
	Body Image (M,SD)	*Functionality* (M,SD)	*Control* (M,SD)	*Body Image* (M,SD)	*Functionality* (M,SD)	*Control* (M,SD)
Baseline	6.56	5.41	8.43	27.98	25.52	27.96
	(11.29)	(13.86)	(12.02)	(4.26)	(4.28)	(4.23)
Test-day	6.22	9.23	7.02	27.20	24.61	27.63
	(13.12)	(11.78)	(14.39)	(4.52)	(4.69)	(4.98)
Follow-up	7.98	7.05	8.47	26.11	24.09	26.80
	(12.17)	(11.51)	(13.09)	(5.56)	(6.21)	(6.29)

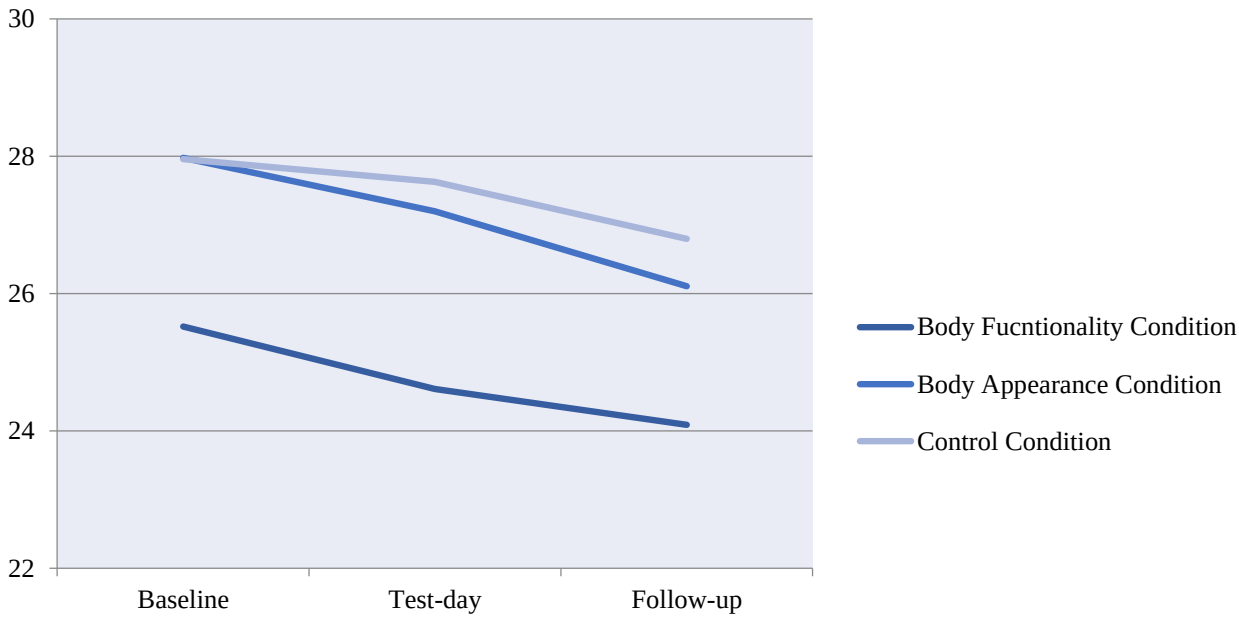

Figure 4. Mean self-esteem scores at baseline, test-day and follow-up for the three conditions

3.5 Self-Objectification

The self-objectification measure was analysed with 3(Condition; body image, body functionality, control) x 3(Time; baseline, test-day, follow-up) repeated measures analyses of variance with Condition as a between subjects factor and Time as a within subjects factor. The analysis with self-objectification found no significant main effects of Condition, $F(2,128) = 0.94$, *ns*, or Time, $F(2,127) = 1.03$, *ns*. However, a significant interaction effect between Time and Condition was found, $F(4,256) = 3.35$, $p < .05$. The interaction was followed up with planned comparisons (paired t-tests), testing the differences between baseline and test-day and baseline and follow-up for each condition. For participants in the body image and control conditions, no significant changes in self-objectification between baseline and test- day (*ps* <.25) and baseline and follow-up (*ps* <.26) occurred. However, participants in the functionality condition reported lower self-objectification on test-day as

compared to baseline t(47) = -2.64, p<.05. At one-week follow-up the difference with baseline self-objectification was no longer significant, t(47) = -1.3, *ns*. The interactive effect is presented in Figure 5, where the significant difference can be seen in the functionality condition between baseline and test-day.

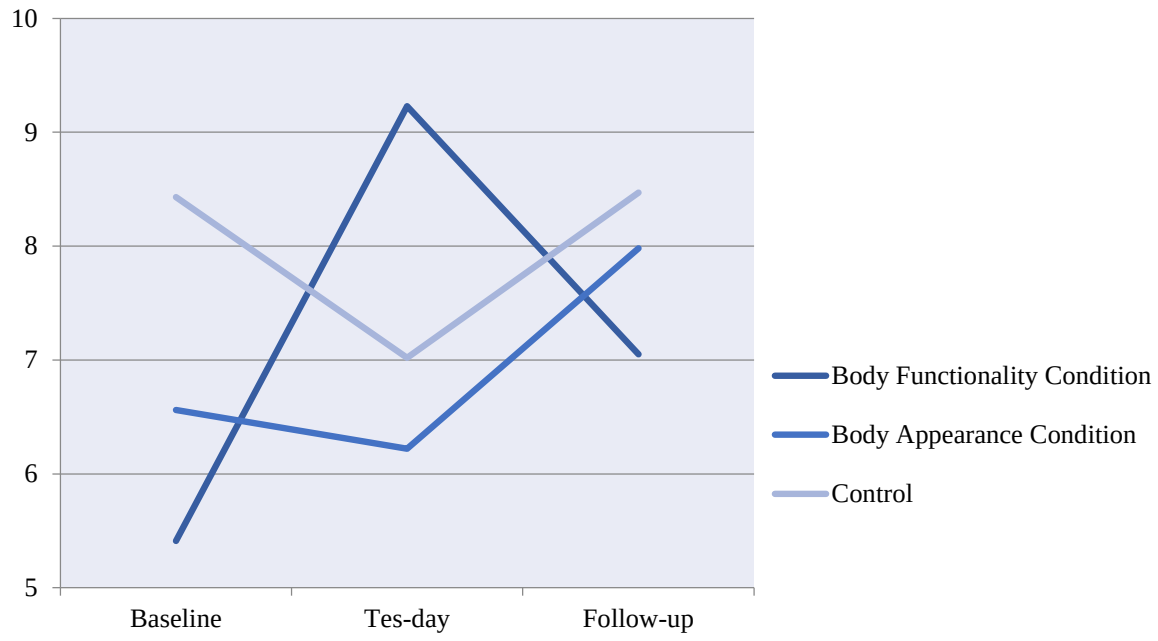

Figure 5. Women's mean self-objectification score at baseline, test-day and follow-up for the three conditions

3.6 The moderating role of neuroticism

The repeated measures analyses of variance described in the previous section were repeated for the three satisfaction measures including neuroticism assessed at baseline as a covariate. To examine whether neuroticism moderated the relationship between Condition and satisfaction two- and three-way interactions between neuroticism, Condition and Time were examined.

3.6.1 Physical appearance Satisfaction

The analysis with physical appearance satisfaction found no significant interaction effect between neuroticism, Condition and Time, $F(4, 250) = .575$, *ns*, meaning that neuroticism did not moderate the relationship between physical appearance satisfaction and writing assignment. The interaction effects between neuroticism and Condition, $F(2,125) = .096$, *ns*, and neuroticism and Time were also not significant, $F(2,124) = .829$, *ns*. However a significant main effect was found for neuroticism, $F(1, 125) = 19.98$, $p < .05$, meaning that neuroticism had a significant effect on women's physical appearance satisfaction in such a way that participants who scored higher on neuroticism were less satisfied with their physical appearance at all three time points. The negative correlations between neuroticism and physical appearance satisfaction at baseline, test-day and follow-up are shown in Table 4.

3.6.2 Body shape and size satisfaction

The analysis with body shape and size satisfaction found no significant interaction effect between neuroticism, Condition and Time; $F(4, 250) = .343$, *ns*, meaning that neuroticism did not moderate the relationship between body shape and size satisfaction and writing assignment. The interaction effects between neuroticism and condition $F(2, 125) = .64$, *ns* and neuroticism and time were also not significant; $F(2, 124) = 1.50$, *ns*. However, a significant main effect was found for neuroticism meaning that neuroticism had a significant effect on women's body shape and size satisfaction, $F(1, 125) = 12.15$, $p < .05$ in such a way that participants who scored higher on neuroticism were less satisfied with their body shape and size at all three time points. The negative correlations between neuroticism and body shape and size satisfaction can be seen in table 4.

3.6.3 Body functionality satisfaction

The analyses with body functionality satisfaction found no significant interaction effect between neuroticism, Condition and Time; F (4, 250) = 1.34, *ns*, meaning that neuroticism did not moderate the relationship between body functionality satisfaction and writing assignment. The interaction effects between neuroticism and Condition, F(2,125) = .4, *ns* and neuroticism and Time were also not significant, F(2, 124) = .41, *ns*. However a significant main effect was found for neuroticism, F (2, 125) = .4, $p < .05$., meaning that neuroticism had a significant effect on women's body functionality satisfaction in such a way that participants who scored higher on neuroticism were less satisfied with their body functionality at all three time points. The negative correlations between neuroticism and body functionality satisfaction can be seen in table 4.

3.7 The moderating role of social comparison orientation

The repeated measures analyses of variance described in the earlier sections were repeated for the three satisfaction measures including social comparison assessed at baseline as a covariate. To examine whether social comparison moderated the relationship between Condition and satisfaction, two- and three-way interactions between social comparison, Condition and Time were examined.

3.7.1 Physical appearance Satisfaction

The analyses involving physical appearance satisfaction found no significant interaction effect, between social comparison, Condition and Time; F(4, 250) =, *ns*, meaning that social comparison orientation did not moderate the relationship between physical

appearance satisfaction and writing assignment. The interaction effects between social comparison and Condition, F(2, 125) = .789, *ns,* and social comparison and Time, F(2, 124) = .526, *ns* were also not significant. No main effect was found for social comparison, F(1, 125) = 3.6, *ns,* meaning that social comparison did not have an effect on women's physical appearance satisfaction at baseline, test-day or follow-up. Correlations between social comparison and physical appearance satisfaction can be seen in Table 4.

3.7.2 Body shape and size satisfaction

The analyses with body shape and size satisfaction found no significant interaction effect between social comparison, Condition and Time, F(4, 250) = .61, *ns*, meaning that social comparison did not moderate the relationship between body shape and size satisfaction and writing assignment. The interaction effect between social comparison and Condition, F(2, 125) = .191, *ns,* and social comparison and Time, F(2, 124) = 2.71, *ns,* were also not significant. No significant main effect was found for social comparison F(1,125) = 2.42, *ns*, meaning that social comparison did not have an effect on women's body shape and size satisfaction at baseline, test-day or follow-up. Correlations between social comparison and body shape and size satisfaction can be seen in Table 4.

3.7.3 Body functionality satisfaction

The analyses with body functionality satisfaction found no significant interaction effect between social comparison, Condition and Time, F(4, 250) = .65, *ns*, meaning that social comparison orientation did not moderate the relationship between body functionality satisfaction and writing assignment. The interaction effects between social comparison and Condition, F(2,125) = .33, *ns,* and social comparison and Time, F(2, 124) = 1.74, *ns,* were

also not significant. No significant main effect was found for social comparison, F(1, 125) = 3.49, *ns*, meaning that social comparison did not have an effect on women's body functionality satisfaction F(1, 125) = 3.49, *ns*, at baseline, test-day or follow-up. Correlations between social comparison and body functionality satisfaction can be seen in Table 4.

Table 4.
Correlations between neuroticism, social comparison orientation and the satisfaction measures at baseline, test-day and follow-up

	Neuroticism	Social comparison orientation
Physical appearance satisfaction		
Baseline	-.32**	-.15
Test-day	-.32**	-.12
Follow-up	-.33**	-.17*
Body shape and size satisfaction		
Baseline	-.29**	-.16*
Test-day	-.24**	-.09
Follow-up	-.26**	-.07
Body functionality satisfaction		
Baseline	-.36**	-.23**
Test-day	-.34**	-.09
Follow-up	-.31**	-.12

* $p < .05$.
** $p < .01$.

4. Discussion

4.1 Findings

No group differences were found in BMI, neuroticism, social comparison and dieting status between the three conditions, meaning that randomisation of groups was successful. Participants who did not complete the manipulation (writing task) properly were removed before data analyses began.

This study explored the relationship between body functionality and body satisfaction, as well as the moderating role of neuroticism and social comparison. The hypotheses were partially supported.

Hypothesis one predicted that the body functionality group would show a significant increase in their body satisfaction compared to the other groups. This hypothesis was not supported. The body functionality group did not show any significant increases in their body satisfaction compared to the body image and control group at baseline, test-day or follow-up. The body functionality group did however report higher functionality satisfaction than the control group, although this was not statistically significant.

Hypothesis two predicted that the body image group would show a decrease in their body satisfaction compared to the other groups. This hypothesis was not supported. The body image group did not show any significant differences in their body satisfaction across baseline, test-day and follow-up.

Hypothesis three addressed self-esteem and predicted the body image group to report lower self-esteem than the functionality and control groups. This hypothesis was supported. Participants in the body image group reported significantly lower self-esteem at test-day and follow-up compared to baseline than the functionality and control groups.

Hypothesis four predicted that the body functionality group would report lower self-objectification. This hypothesis was partially supported, as while the functionality group did not report lower self-objectification as compared to the image and control groups, their self-objectification did lower significantly over time. Results found that participants in the body functionality group reported lower self-objectification on test-day as compared to baseline. At follow-up the difference was no longer significant.

Hypothesis five and six related to the moderating role of neuroticism and predicted that for people high in neuroticism, body functionality would not serve as a protective factor against body dissatisfaction and the body image group would also show higher decreases in body satisfaction when they were also high in neuroticism. These hypotheses were partially supported. Neuroticism did not moderate the relationship between body satisfaction and writing assignment. However, all participants who had higher neuroticism scores showed significantly lower body satisfaction scores overall.

Hypothesis seven and eight predicted that for people high in social comparison, body functionality would not serve as a protective factor against body satisfaction and the body image group would show greater decreases in body satisfaction when they were also high in social comparison. Both of these hypotheses were not supported. Social comparison did not moderate the relationship between body satisfaction and writing assignment. Overall, participants high in social comparison did not report differences in body satisfaction compared to other participants.

Some interesting results were found that were not related to any of the predicted hypotheses. The control group reported lower physical appearance satisfaction on test-day as compared to baseline however this difference was no longer significant at follow-up. The control group also scored significantly lower on their body shape and size satisfaction at baseline, test-day and follow-up compared to the functionality and image groups.

4.2 Theoretical implications

4.2.1 Body functionality versus body image

Body functionality was shown to have a positive effect on body satisfaction in undergraduate men and women aged 30-50 years (Alleva et al, 2014). Other studies have shown body functionality to positively affect undergraduate students' body satisfaction (Avalos & Tylka,

2006). However, results are mixed because a further study by Alleva et al (2016) did not find body functionality to improve body satisfaction. The current study was in line with research suggesting a body functionality focus does not affect body satisfaction as there were no differences found in body satisfaction between the functionality group and the image and control groups. While this result was clear, there are still many factors that need addressing as some interesting results were found.

It is thought that people have an idea of what their body should look like, and when assessing their body image, they rate how their actual body looks compared to how they think their ideal body should look. This is where body dissatisfaction can increase, because the discrepancy between actual and ideal bodies is usually quite big. Although this is the case, Mulgrew and Hennes (2015) found no differences in body satisfaction between an aesthetic focussed group and a functionality focussed group when assessing body functionality. The result from the current study is similar to this, where the body image group did not display any significant decreases in their body satisfaction over time or compared to the functionality and control groups.

A general consensus from previous research is that control groups tend to be less affected by body dissatisfaction than image or functionality groups, as they are not primed to think about their bodies beforehand. A study by Alleva et al which did not use a control group listed this as a limitation of the study as the changes in body satisfaction may have been clearer if there was a control group to compare to. It was expected that the control group in this study would not be affected by changes in body satisfaction as they were not primed to think about their body at all. However, interestingly the control group was the only group who did show changes in their body satisfaction. They reported decreased physical appearance satisfaction and decease shape and size satisfaction at test-day compared to baseline. This is a result that has not been supported by previous literature.

4.2.2 Self-esteem

Self-esteem plays an important role in body satisfaction in that people who have low body satisfaction tend to have low self-esteem as well. Low self-esteem is a reasonably strong negative outcome of low body satisfaction. Research has found that people with low self-esteem tend to have low body satisfaction, and those with higher self-esteem tend to have higher body satisfaction (Thogersen-Ntoumani et al, 2011). It has also been found that body dissatisfaction is a predictor of low self-esteem late in life (Paxton et al, 2006). These ideas around the relationship between body satisfaction and self-esteem were supported as the body image group reported significantly lower self-esteem at test-day and follow-up compared to baseline. While this result supports the literature, it is interesting given the fact that the body image group did not actually report any body satisfaction changes during the study. This perhaps suggests that using a different way to assess one's body may not be strong enough to change their overall satisfaction, but might influence the general the way people feel about themselves, which is expressed as lowered self-esteem.

4.2.3 Self-objectification

Self-objectification is a trait thought to be influenced heavily by society and the media (Fredrickson & Roberts, 1997). It involves women feeling like their worth is based on what others think of them and leads them to judge themselves based on how they think others would feel about them. Self-objectification has been linked with body dissatisfaction (Myers & Crowther, 2007; Noll & Fredrickson, 1998) and a study which involved women viewing themselves in either a swimsuit or a sweater, found that those who wore a swimsuit engaged in more self-objectification and in turn more body shame (Quinn et al, 2006). Results from

this study partially supported previous research on self-objectification. While the body functionality group did not report lower self-objectification than the image and control groups, they did report lower self-objectification over time. Meaning that at test-day (straight after intervention) they reported lower self-objectification than they had at baseline. This is in accordance with research which suggests that self-objectification and body image are strongly related, whereas functionality which involves less preconceived societal ideals, leads to less self-objectification.

4.2.4 Neuroticism

When investigating the relationship of personality traits and body satisfaction, neuroticism was associated with body image dissatisfaction (Tok et al, 2010). A further study found that neuroticism was negatively associated with body appreciation, meaning that as neuroticism increases, one's body appreciation decreases (Swami et al, 2013). This research suggests that the moderating role of neuroticism in the relationship between body functionality and body satisfaction is worth investigating. While the current study did not find neuroticism to moderate this relationship, it did find that overall, people high in neuroticism, had lower body satisfaction. This supports the literature that being high in neuroticism has a role in one's body satisfaction.

4.2.5 Social comparison

Research investigating social comparison suggests that when women engage in upward social comparisons, they tend to be less satisfied with their own body (Tantleff-Dunn & Gokee, 2002). It also appears that even when women are aware of the detrimental effects of making social comparisons, they will continue to do this behaviour (Strahan et al, 2006). This study

predicted that people high in social comparison would be less satisfied with their bodies, however this was not found. Participants high in social comparison did not report lower body satisfaction. This finding is different to what the literature has suggested about social comparison and body satisfaction.

4.3 Strengths and limitations

4.3.1 Strengths

The first strength of this study is that randomisation of the experimental groups was successful. There were no group differences and the sample was representative of the New Zealand population. The participants did not have any previous mental health or eating disorder diagnoses; therefore they were not likely to be previously influenced by the topic of this research.

Secondly, the measures used in this study were reliable and valid. The neuroticism subscale is a widely used measure with high and consistent reliability and validity (John & Srivastava; 1999). The Rosenberg self-esteem scale is of the same nature. It is widely used in research and provides good reliability and validity (RSE-S; Rosenberg, 1965; Schmitt & Allik, 2005) .

Lastly, this study was able to be completed by participants in their own home, on their own device. This means that participants may have been more relaxed when answering the questionnaires and not felt pressured by being in an experimental environment.

4.3.2 Limitations

This study contained some limitations which require discussion.

Firstly, there is a limitation to using self-report questionnaires. While bias was reduced by using reliable VAS measures for body satisfaction, the entire questionnaire was based on self-report answers, which means it is difficult to tell if participants answered the questions truthfully. This is often going to be a risk when using self-report measures as it is difficult to control for people answering inaccurately.

Secondly, although it was mentioned above as being a strength of this study, the fact that participants were free to complete this study in their own environment may also be a limitation as there is no way to control for outside factors influencing their answers while they are completing the study. It could be possible that people began answering the questionnaire, got distracted and then came back to it later, or even had someone else with them while they were answering. While giving people a relaxed and safe environment to complete this study in has its benefits, it also comes with some uncontrollable risks.

Third, it was made clear to participants in the instructions that they were to complete the three questionnaires one week apart; however whether they adhered to this was uncontrollable. They certainly could not complete the questionnaires in a shorter time frame, as each questionnaire was emailed out one-week apart, however, participants may not have completed it straight away. They may have received the email but not actually completed the task until 2 weeks later. Again, this is something that is difficult to control for when participants are completing the measures from their own home.

Fourth, while the sample size was big enough to prove statistical significance, it was still relatively small. This study could have benefited from a larger sample size.

Fifth, the length of the intervention may have been too short. This could relate to why the body functionality group did not show any changes in body satisfaction. How one feels about their body is something they think about every day. In order to change their perceptions, a

body functionally approach may work, however, it may take longer than one writing task. A study by Alleva et al (2015) used a three-step writing program to manipulate body focus. Perhaps using a design more similar to this with a longer intervention may show stronger results in favour of a body functionality approach.

The last limitation is the fact that there is currently no questionnaire that is entirely based on body functionality. To accommodate this, the VAS were developed, however there are more aspects in regards to body functionality that should be measured.

4.4 Future research

Future research would benefit from using a larger sample size. This would provide more statistical power and perhaps see some results that were not found in this study.

Replication with a longer intervention could be extremely beneficial. It would be positive to see the effect that a body functionality focus could have over time.

Developing a measure specifically for body functionality would also be beneficial. If body functionality is going to become a great focus in body research then there needs to be a reliable and valid measure to assess it.

4.5 Implications

While this study could not provide evidence of a body functionality focus improving body satisfaction, there are many other results that have beneficial implications. Neuroticism was shown to affect participants' body satisfaction. This is important information as it could be used when developing treatment plans for eating disorders. It has been found that body dissatisfaction is one of the main causal factors in eating and body dysmorphic disorders. Therefore, we can use this knowledge that the trait of neuroticism effects body satisfaction

when treating patients. If it is known that specific personality traits are also influencing someone's body satisfaction, specific ways to enhance or cope with these traits could be developed. This could in turn help to refocus someone's perception of their body.

4.6 Conclusions

It has been highlighted that the way in which we look at our bodies currently, by focussing on aesthetic qualities, can often lead to body dissatisfaction. Part of the reason that focusing on these qualities is so harmful is because of society's great influence in portraying what the female body should look like. Objectification theory provides reasons for women to think their value or worth is based on their physical appearance. Many negative outcomes have been associated with body dissatisfaction including depression, anxiety and low self-esteem. Therefore it is important to try and refocus how women look at their bodies' into a more positive frame. This thesis looked at doing this by using a body functionality focus. It also investigated if neuroticism and social comparison moderate this relationship. Results did not support that using a body functionality focus could improve body satisfaction. However, this study showed that participants high in neuroticism had lower body satisfaction and the participants in the body image group had lower self-esteem. This study highlights two important ideas. Firstly that there is a need to refocus women away from making body image assessments, due to the fact that participants in the body image group had lower self-esteem. Secondly, personality traits can have an impact on body satisfaction; specifically, being high in neuroticism is associated with lower body satisfaction.

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Appendices

APPENDIX A

Research Participants Wanted

I am looking for women aged 18-35 to participate in an online study about body satisfaction for my masters study.

Participation involves completing on online questionnaire at three time points one week apart. I will be asking you questions about body satisfaction, self-esteem, food choices and about the type of person you are. You will also be asked to complete a short, guided writing task (10 minutes) The entire study will be completed online and will take approximately 45 minutes in total (10-15 minutes for the 1st questionnaire, 15-20 minutes for the writing task plus 2nd questionnaire, and 10 minutes for the 3rd questionnaire). You will be able to access the survey from your own home.

This research is being carried out by Kesia Stock and supervised by Roeline Kuijer and Neville Blampied of the University of Canterbury, Department of Psychology.

If you are interested in participating or would like more information please contact,

Kesia Stock: kesia.stock@pg.canterbury.ac.nz

The University of Canterbury Human Ethics Committee has approved this project

APPENDIX B

Department: Psychology
Telephone: +64 3 364 2902
Email: kesia.stock@pg.canterbury.ac.nz
[Date]

Correlates of Body Satisfaction
Information Sheet for Participants

My name is Kesia Stock, I am a Masters student at the University of Canterbury, studying psychology.

Study aim
The purpose of this study is to investigate body satisfaction and its relation to other variables such as self-esteem, personality (the type of person you are) and food choice motives and to see whether any of these variables change over the course of two weeks.

Who can participate?
Females aged between 18-35 years, not suffering from an eating disorder, or not having suffered from an eating disorder in the past. An eating disorder is defined includes Anorexia Nervosa, Bulimia Nervosa and EDNOS.

What does participation involve?
Participation in the study involves completing three short questionnaires one week apart. In these questionnaires we will ask you questions about the type of person you are, self-esteem, body satisfaction and food choice motives. You will also be asked to complete a short, guided writing task. The entire study will be completed online and will take approximately 45 minutes in total. You can access the study from your own device (computer, ipad/tablet, phone) at a time that suits you, or you may come in to the University and have access to a computer. At the conclusion of the study you will receive a $10 petrol voucher for your participation.

At the bottom of this letter you will find a link to the 1st questionnaire and your personal participant ID number. If you click on the link, you will first be asked to complete a consent form. After providing your consent you will then be taken to the questionnaire (10-15 minutes to complete). One week after completing the 1st questionnaire you will receive an email with a link to the 2nd questionnaire and the writing task (15-20 minutes to complete the writing task and questions), followed by another email 1 week later again with a link to the 3rd and final questionnaire (10-15 minutes to complete).

It is not anticipated that participation in this study will involve any risk to you. However, if during or after your involvement in the study you are concerned about body issues and want to talk to someone, here are some resources that you can use:
- Your general practitioner
- Life line (0800 543 354)
- Student health centre (if you are a UoC student) (03 3642402)

Please remember that participation is voluntary and you have the right to withdraw at any stage without penalty. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, I will remove all information relating to you. However, once data has begun to be analyzed (April 2017), removal becomes impossible.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: your identity will not be made public without your prior consent. To ensure anonymity and confidentiality, number codes will be assigned to each participant, and then data will be analyzed at group level. This will be used in the publication of the thesis and when results are presented at conferences. Only my supervisors and I will have access to the data. Data will be stored online and will be destroyed five years after the completion of the study. A thesis is a public document and will be available through the UC Library.

The project is being carried out as a requirement for a Master of Science degree in psychology by Kesia Stock under the supervision of Roeline Kuijer and Neville Blampied, who can be contacted at roeline.kuijer@canterbury.ac.nz and Neville.blampied@canterbury.ac.nz. They will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

Link to consent form and first questionnaire: xxxxxxxxx
Personal participant ID number: xxx

APPENDIX C

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Correlates of Body Satisfaction Questionnaire 1

Thank you for your interest in our study on Correlates of Body Satisfaction. Before you complete the first questionnaire for the study, please complete the consent from

Consent form for participants

- I have been given a full explanation of this project and have had the opportunity to ask questions.
- I am not currently suffering from an eating disorder or have been diagnosed with an eating disorder in the past, including Anorexia Nervosa, Bulimia Nervosa or EDNOS.
- I understand what is required of me if I agree to take part in the research.
- I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- I understand that any information or opinions I provide will be kept confidential to the researcher and her supervisors and that any published or reported results will not identify the participants. I understand that a thesis is a public document and will be available through the UC Library.
- I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after five years.
- I understand the risks associated with taking part and how they will be managed.
- I understand that I can contact the researcher (Kesia Stock, Kesia.stock@pg.canterbury.ac.nz) or her supervisors (Roeline Kuijer, roeline.kuijer@canterbury.ac.nz and Neville Blampied, Neville.blampied@canterbury.ac.nz) for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)

☐ I agree to participate in this research project (please go to the next page to start the questionnaire)

☐ I have decided NOT to participate (please exit the questionnaire by closing the window).

APPENDIX D

Department: Psychology
Telephone: +64 3 364 2902
Email: kesia.stock@pg.canterbury.ac.nz
[Date]

Correlates of Body Satisfaction
Information Sheet for Participants

My name is Kesia Stock, I am a Masters student at the University of Canterbury, studying psychology.

Study aim
The purpose of this study is to investigate body satisfaction and its relation to other variables such as self-esteem, personality (the type of person you are) and food choice motives and to see whether any of these variables change over the course of two weeks.

Who can participate?
Females aged between 18-35 years, not suffering from an eating disorder or having suffered from an eating disorder in the past.

What does participation involve?
Participation in the study involves completing three short questionnaires one week apart. In these questionnaires we will ask you questions about the type of person you are, self-esteem, body satisfaction and food choice motives. You will also be asked to complete a short, guided writing task. The first two questionnaires of the study will be completed online, and you will be required to come into the psychology department to complete the final questionnaire (follow-up and a participation exercise). The whole study will take approximately 45 minutes in total. You can access the first two parts of the study from your own device (computer, ipad/tablet, phone, including using a computer at the university) at a time that suits you, and the final part will also be online when you come into the psychology department. At the conclusion of the study you will receive course credit for your participation.

At the bottom of this letter you will find a link to the 1st questionnaire and your personal participant ID number. If you click on the link, you will first be asked to complete a consent form. After providing your consent you will then be taken to the questionnaire (10-15 minutes to complete). One week after completing the 1st questionnaire you will receive an email with a link to the 2nd questionnaire and the writing task (15-20 minutes to complete the writing task and questions), followed by another email 1 week later again asking you to make a time to come into the psychology department to complete the final questionnaire (follow-up) and participation exercise to receive your course credit (10-15 minutes to complete).

It is not anticipated that participation in this study will involve any risk to you. However, if during or after your involvement in the study you are concerned about body issues and want to talk to someone, here are some resources that you can use:
- Your general practitioner
- Life line (0800 543 354)
- Student health centre (if you are a UoC student) (03 3642402)

Please remember that participation is voluntary and you have the right to withdraw at any stage without penalty. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, I will remove all information relating to you. However, once data has begun to be

analyzed (April 2017), removal becomes impossible.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: your identity will not be made public without your prior consent. To ensure anonymity and confidentiality, number codes will be assigned to each participant, and then data will be analyzed at group level. This will be used in the publication of the thesis and when results are presented at conferences. Only my supervisors and I will have access to the data. Data will be stored online and will be destroyed five years after the completion of the study. A thesis is a public document and will be available through the UC Library.

The project is being carried out as a requirement for a Master of Science degree in psychology by Kesia Stock under the supervision of Roeline Kuijer and Neville Blampied, who can be contacted at roeline.kuijer@canterbury.ac.nz and Neville.blampied@canterbury.ac.nz. They will be pleased to discuss any concerns you may have about participation in the project.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

Link to consent form and first questionnaire: xxxxxxxxx
Personal participant ID number: xxx

APPENDIX E

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Correlates of Body Satisfaction Questionnaire 1

Thank you for your interest in our study on Correlates of Body Satisfaction. Before you complete the first questionnaire for the study, please complete the consent from

Consent form for participants

- I have been given a full explanation of this project and have had the opportunity to ask questions.
- I am not currently suffering from an eating disorder or have been diagnosed with an eating disorder in the past.
- I understand what is required of me if I agree to take part in the research.
- I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- I understand that any information or opinions I provide will be kept confidential to the researcher and her supervisors and that any published or reported results will not identify the participants. I understand that a thesis is a public document and will be available through the UC Library.
- I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after five years.
- I understand the risks associated with taking part and how they will be managed.
- I understand that I can contact the researcher (Kesia Stock, Kesia.stock@pg.canterbury.ac.nz) or her supervisors (Roeline Kuijer, roeline.kuijer@canterbury.ac.nz and Neville Blampied, Neville.blampied@canterbury.ac.nz) for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)

☐ I agree to participate in this research project (please go to the next page to start the questionnaire)

☐ I have decided NOT to participate (please exit the questionnaire by closing the window).

APPENDIX F

UNIVERSITY OF CANTERBURY
Te Whare Wānanga o Waitaha
CHRISTCHURCH NEW ZEALAND

Correlates of Body Satisfaction

Debriefing sheet

Thank you for participating in my study. You were told that the study aimed to look at the relationship between body satisfaction and other variables such as self-esteem, personality (the type of person you are) and food choice motives. What I was really interested in is whether focusing on either 'body functionality' or 'body appearance' would influence body satisfaction, self-esteem and food choice motives.

Previous research by Alleva and colleagues (Alleva et al., 2015, 2016) has shown that women who are asked to focus on 'all the things their body can do' (so-called 'body functionality' focus) report being more satisfied with their bodies compared to women who are asked to focus on what their body looks like ('body appearance' focus). The aim of my study was to a) replicate these findings and extend the study by looking at other variables (e.g. food choice motives) and b) examine whether certain personality traits play a role in how women respond to the 'body functionality' and 'body appearance' focus.

To examine this I used a writing task to experimentally manipulate body focus. Participants in the study were randomly assigned to one of three versions of the writing task. Participants in the 'body functionality' group were asked to write about all the things their body can do. Participants in the 'body appearance' group were asked to write about what their body looks like. There was also a third group (a control condition) who were asked to write about their travel route to university or work. All participants completed the same questionnaires measuring body satisfaction, self-esteem and food choice motives one week before the writing task, immediately after the writing task and one week after the writing task.

I would like to reiterate that participation in this study is voluntary and that you may ask for your raw data to be returned to you or destroyed. If you request this, I will remove all information relating to you. However, once analysis of raw data starts (April 2017) it will no longer be possible to withdraw your data.

Please feel free to contact myself (Kesia Stock, kesia.stock@pg.canterbury.ac.nz) or my primary supervisor (Roeline Kuijer, roeline.kuijer@canterbury.ac.nz) if you have any questions or concerns regarding the study.

This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch, (human-ethics@canterbury.ac.nz).

If you are concerned about body issues and want to talk to someone, here are some resources that you can use:

- Your general practitioner
- Life line (0800 543 354)

- Student Health Centre (if you are a UoC student) (03 364 2402)

APPENDIX G

HUMAN ETHICS COMMITTEE

Secretary, Rebecca Robinson
Telephone: +64 03 369 4588, Extn 94588
Email: human-ethics@canterbury.ac.nz

Ref: HEC 2017/08

10 March 2017

Kesia Stock
Psychology
UNIVERSITY OF CANTERBURY

Dear Kesia

The Human Ethics Committee advises that your research proposal "The Relationship Between Focusing on Body Functionality and Body Satisfaction: the Moderating Role of Neuroticism and Social Comparison Orientation" has been considered and approved.

Please note that this approval is subject to the incorporation of the amendments you have provided in your email of 9th March 2017.

Best wishes for your project.

Yours sincerely

R. Robinson

pp.

Associate Professor Jane Maidment
Chair
University of Canterbury Human Ethics Committee

APPENDIX H

Pre-test, post-test and follow-up

1	Please enter your three digit participant ID number	…….
2	What is your date of birth?*	……..

*DOB will be asked at all time points and will be used as a back-up ID number if participant does not enter their (correct) three digit participant ID number.

Background information (pre-test only)

1	Would you like to receive a summary of study?	O O	yes no
2a	Are you a university student?	O O	yes no (please go to question 3)
2b	If yes, at which level are you doing most of your courses this year?	O O O O O	100 level 200 level 300 level Postgraduate level Other……
3	How much do you weigh?	…… kilograms	
4	How tall are you?	…… centimetres	
5	Are you currently dieting to lose weight?	O O	yes no

APPENDIX I

Personality (pre-test only)

Neuroticism (The Big Five Inventory; John, Donahue & Kentle, 1991)

The following statements concern your perception about yourself in a variety of situations. Please indicate to what extent you agree which each statement.

	I see myself as someone who …..	**strongly disagree**	**disagree**	**neither disagree nor agree**	**agree**	**strongly agree**
1	Is depressed, blue	O	O	O	O	O
2	Is relaxed, handles stress well	O	O	O	O	O
3	Can be tense	O	O	O	O	O
4	Worries a lot	O	O	O	O	O
5	Is emotionally stable, not easily upset	O	O	O	O	O
6	Can be moody	O	O	O	O	O
7	Remains calm in tense situations	O	O	O	O	O
8	Gets nervous easily	O	O	O	O	O

APPENDIX J

Social Comparison Orientation (Gibbons & Buunk, 1999; Buunk & Gibbons, 2006)

Iowa-Netherlands Comparison Orientation Scale (INCOM)

Most people compare themselves from time to time with others. For example, they may compare the way they feel, their opinions, their abilities, and/or their situation with those of other people. There is nothing particularly 'good' or 'bad' about this type of comparison, and some people do it more than others. We would like to find out how often you compare yourself with other people. To do that we would like to ask you to indicate how much you agree with each statement below.

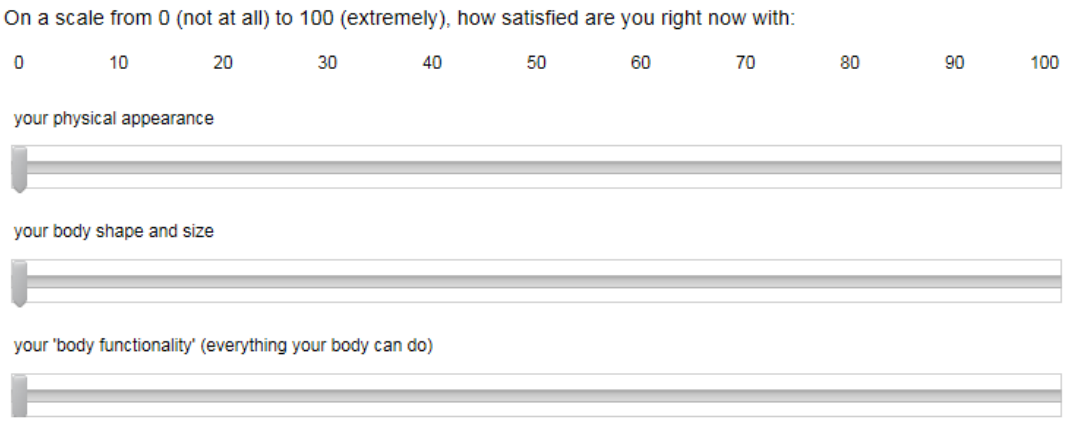
	I disagree strongly	I disagree	I neither agree nor disagree	I agree	I agree strongly
1. I often compare myself with others with respect to what I have accomplished in life	1	2	3	4	5
2. If I want to learn more about something, I try to find out what others think about it	1	2	3	4	5
3. I always pay a lot of attention to how I do things compared with how others do things	1	2	3	4	5
4. I often compare how my loved ones (boy or girlfriend, family members, etc.) are doing with how others are doing	1	2	3	4	5
5. I always like to know what others in a similar situation would do	1	2	3	4	5
6. I am not the type of person who compares often with others	1	2	3	4	5
7. If I want to find out how well I have done something, I compare what I have done with how others have done	1	2	3	4	5
8. I often try to find out what others think who face similar problems as I face	1	2	3	4	5

	I disagree strongly	I disagree	I neither agree nor disagree	I agree	I agree strongly
9. I often like to talk with others about mutual opinions and experiences	1	2	3	4	5
10. I never consider my situation in life relative to that of other people	1	2	3	4	5
11. I often compare how I am doing socially (e.g., social skills, popularity) with other people	1	2	3	4	5

APPENDIX K

Body satisfaction measures (pre-test, post-test and follow-up)

Appearance and functionality satisfaction **(**Alleva et al., 2016; Birkland et al., 2005)



APPENDIX L

Self-objectification Questionnaire (SOQ; Noll & Frederickson)

Please rate the following physical attributes in order of importance when considering how you think about your body.

- firm/sculptured muscles
- physical coordination
- weight
- health
- sex appeal
- strenght
- physical attractiveness
- energy level
- measurement of body areas
- physical fitness level

APPENDIX M

Self-esteem (pre-test, post-test and follow-up)

Rosenberg Self-Esteem Scale (Rosenberg, 1965)

INSTRUCTIONS: Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement

		strongly agree	agree	disagree	strongly disagree
1	On the whole, I am satisfied with myself.				
2	At times I think I am no good at all.				
3	I feel that I have a number of good qualities.				
4	I am able to do things as well as most other people.				
5	I feel I do not have much to be proud of.				
6	I certainly feel useless at times.				
7	I feel that I'm a person of worth, at least on an equal plane with others.				
8	I wish I could have more respect for myself.				
9	All in all, I am inclined to feel that I am a failure.				
10	I take a positive attitude toward myself.				

APPENDIX N

Food choice Questionnaire (pre-test, post-test, follow-up)

FCQ (Steptoe, Pollard & Wardle, 1995)

People find different things important when they buy or eat food. Please indicate to what extent the aspects listed below are important for you.

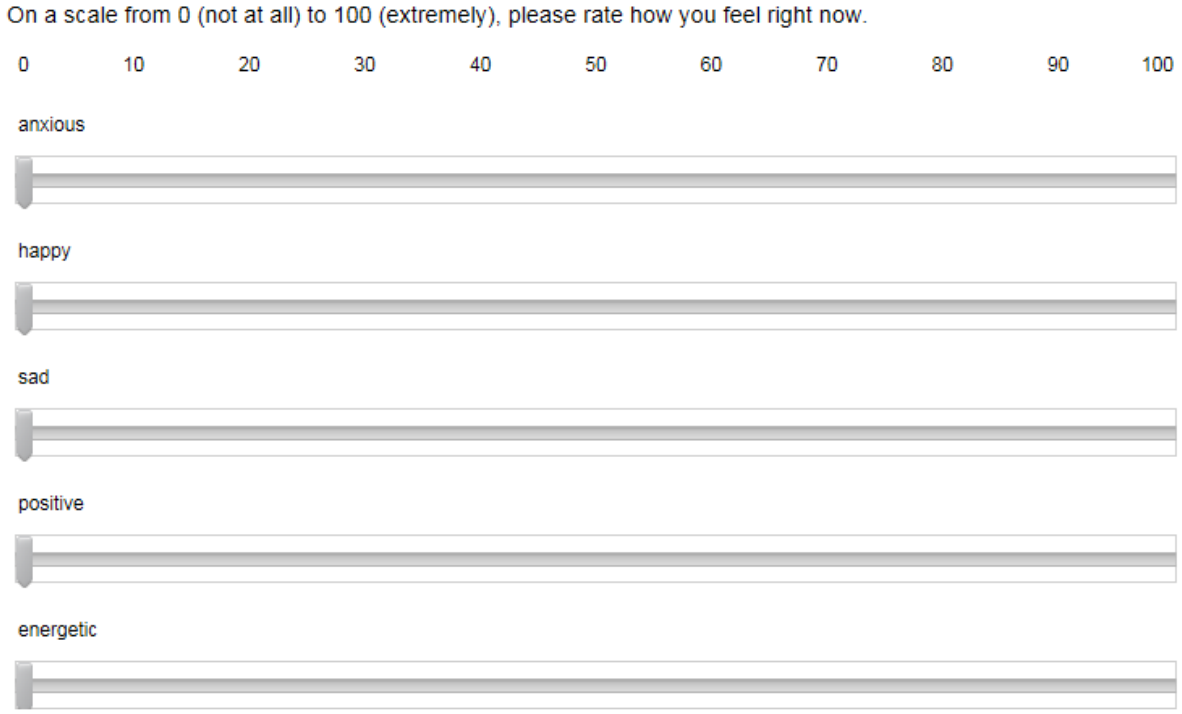
It is important to me that the food I eat on a typical day:

		not at all important	a little important	moderately important	very important
1	Is easy to prepare	O	O	O	O
2	Contains no additives	O	O	O	O
3	Is low in calories	O	O	O	O
4	Tastes good	O	O	O	O
5	Contains natural ingredients	O	O	O	O
6	Is not expensive	O	O	O	O
7	Is low in fat	O	O	O	O
8	Is familiar	O	O	O	O
9	Is high in fiber and roughage	O	O	O	O
10	Is nutritious	O	O	O	O
11	Is easily available in shops and supermarkets	O	O	O	O
12	Is good value for money	O	O	O	O
13	Cheers me up	O	O	O	O
14	Smells nice	O	O	O	O
15	Can be cooked very simply	O	O	O	O
16	Helps me cope with stress	O	O	O	O
17	Helps me control my weight	O	O	O	O
18	Has a pleasant texture	O	O	O	O
19	Is packaged in an environmentally friendly way	O	O	O	O
20	Comes from countries I approve of politically	O	O	O	O
21	Is like the food I ate when I was a child	O	O	O	O
22	Contains a lot of vitamins and minerals	O	O	O	O
23	Contains no artificial ingredients	O	O	O	O
24	Keeps me awake/alert	O	O	O	O
25	Looks nice	O	O	O	O
26	Helps me relax	O	O	O	O
27	Is high in protein	O	O	O	O
28	Takes no time to prepare	O	O	O	O
29	Keeps me healthy	O	O	O	O
30	Is good for my skin/teeth/hair/nails etc	O	O	O	O
31	Makes me feel good	O	O	O	O
32	Has the country of origin clearly marked	O	O	O	O
33	Is what I usually eat	O	O	O	O

34	Helps me to cope with life	O	O	O	O
35	Is cheap	O	O	O	O
36	Can be bought in shops close to where I live or work	O	O	O	O

APPENDIX O

Current mood (post-test only; to control for differences in mood prior to writing task)



APPENDIX P

Writing task (Alleva et al., 2014)

Participants are randomly assigned to one of the following conditions:

Body Functionality:

This is a writing assignment. I would like you to describe what your body can do. In your writing, I would like you to take your time, really let go and explore the different things your body can do. For example, you might want to tie your answer to physical activity and movement (e.g., walking, stretching), to health (e.g., healing, digesting), to daily functions (e.g., eating, sleeping), or even to your body's relationship with other people (e.g., hugging, holding hands). Different bodies can do many different things, so there are no right or wrong answers. Your answer will be unique depending on your body. All of your answers will be completely confidential and anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that you write at least 100 words.

Body Image:

This is a writing assignment. I would like you to describe what your body looks like. In your writing, I would like you to take your time, really let go and explore the appearance of your body. For example, you might want to tie your answer to body shape and weight (e.g., height, bone structure), to facial features (e.g., eye brows, hair texture), to body parts (e.g., arms, hands), or even to your body's other markings (e.g., birthmarks, piercings). Different bodies can look many different ways, so there are no right or wrong answers. Your answer will be unique depending on your body. All of your answers will be completely confidential and anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that you write at least 100 words.

Control:

This is a writing assignment. I would like you to describe what your route to university or work is like. In your writing, I would like you to take your time, really let go and explore what your route is like. For example, you might want to tie your answer to signs (e.g., street signs, shop signs), to buildings (e.g., garages, libraries), to public areas (e.g., parks, market squares), or even to fine details (e.g., flowers, colours). Everyone takes a different route to the university/work, so there are no right or wrong answers. Your answer will be unique depending on the route you take. All of your answers will be completely confidential and anonymous. Don't worry about spelling, sentence structure, or grammar. The only rule is that you write at least 100 words.